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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Thomas Mattes

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EXAMINER

KENNEDY, TIMOTHY J

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

10/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,558	Applicant(s) MATTES, THOMAS	
	Examiner TIMOTHY KENNEDY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-93 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 30,34,37,40,43,46,49,52,55,58,61,64,67,70 and 73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/26/09</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 31-33,35,36,38,39,41,42,44,45,47,48,50,51,53,54,56,57,59,60,62,63,65,66,68,69,71,72 and 74-93.

DETAILED ACTION

Response to Amendment

1. By way of the amendment filed 8/5/2009: claims 1-29 are canceled, claims 30, 34, 37, 40, 43, 46, 49, 52, 55, 58, 61, 64, 67, 70, and 73 were previously presented, and the remainder are withdrawn.

Drawings

2. The drawings were received on 8/5/2009. These drawings are accepted.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Examiner wishes to point out to applicant that claims 30, 34, 37, 40, 43, 46, 49, 52, 55, 58, 61, 64, 67, 70, and 73 are directed towards an apparatus and as such will be examined under such conditions. The material worked upon or the process of using the apparatus is viewed as recitation of intended use and is not given patentable weight (Please see MPEP 2114 R1-2115 R2 for further details).

5. Claims 30, 34, 37, 40, 43, 52, 55, 58, 64, 67, 70, and 73 are rejected under 35 U.S.C. 102(b) as being anticipated by Exner et al (DE 19952998, already of record, herein after referred to as Exner, using machine translation as English equivalent). Regarding claim 30, Exner teaches:

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6. Apparatus for manufacturing a three-dimensional object by a generative manufacturing method, wherein the object is manufactured in a vertical direction layer-wise from a building material (Figure 1)
7. A support (Figure 1, parts 9a)
8. A material application device for applying layers of a building material onto a support or a layer (Figures 1 and 2, parts 7, 7a, and 7b)
9. An arrangement for interconnecting the applied layer with a layer, which was applied before, in a solidification region (First Embodiment, page 3 of English translation)
10. The support and the material application device are moveable with respect to each other in such a way, that during the interconnection of the applied layer to a layer, which was applied before, the layer, which was applied before, and the material application device are moved with respect to each other and the support can be moved relative to the material application device in a rotational movement with feed in direction of the axis of rotation. (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation and Figure 1, parts 3, 4, 7, 9a, 9b, and 10)
11. Regarding claim 34, Exner teaches:
12. The feed is carried out continuously or in steps (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)
13. Regarding claim 37, Exner teaches:
14. The support and the material application device are moveable in such a way, that in a complete rotation the support departs from the material application device by an

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amount of a thickness of one layer (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)

15. Regarding claim 40, Exner teaches:

16. The support moves and the material application device and the arrangement for interconnecting the layers are stationary (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)

17. Regarding claim 43, Exner teaches:

18. The support is stationary and the material application device and the arrangement for interconnection move (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)

19. Regarding claim 52, Exner teaches:

20. Several solidification regions are provided ((Figure 1, part 1, First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)

21. Regarding claim 55, Exner teaches:

22. Several supports are provided (Figure 2, parts 3a and 3b, Third Embodiment, page 4 and 5 of English translation)

23. Regarding claim 58, Exner teaches:

24. The feeds of the supports can be controlled independently (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)

25. Regarding claim 64, Exner teaches:

26. Several material application devices are provided (Third Embodiment, page 4 and 5 of English translation)

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27. Regarding claim 67, Exner teaches:

28. Wherein to each solidification region there is assigned an arrangement for interconnection of the applied layer to a layer, which was applied before (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)

29. Regarding claim 70, Exner teaches:

30. The building material is in form of powder and the apparatus for interconnection of the applied layer to a layer of the building material, which was applied before, is preferably a laser for sintering the powder or an arrangement for solidification of the powder by a glue (First Embodiment, page 3 or Third Embodiment, page 4 and 5 of English translation)

31. Regarding claim 73, Exner teaches:

32. The support is part of a container for accommodating the building material (Figure 1, parts 2, 4, 9b, and 10)

Claim Rejections - 35 USC § 103

33. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

34. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

35. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

36. Claims 46 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Exner, in view of Kubo et al (U.S. PGPub 2001/0050448, already of record, herein after referred to as Kubo). Regarding claims 46 and 49, Exner does not teach:

37. Claim 46) The velocity and/or the feed in direction of the axis of rotation can be varied

38. Claim 49) The circumferential velocity of the rotational movement can be varied.

39. In the same field of endeavor Kubo teaches, varying the speed at which the material is applied by adjust the speed of the applicators rotation (paragraphs 0108 and 0115). This creates a more even layer.

40. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the variable speeds as taught by Kubo, using the Exner

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apparatus, since doing so would produce a more even powder layer, thus producing a better product.

41. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Exner, in view of Masters (U.S. Patent 5,134,569). Regarding claim 61, Exner does not teach:

42. The supports make a rotational movement on a non-circular path, preferably a polygon with n corners, for the case that n supports are provided.

43. In the same field of endeavor Masters teaches placing the building area (i.e. the supports) on a two axis slide system. This would allow the user to create a non-circular rotational movement during the creation of the model.

44. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the two axis slide system as taught by Masters using the Exner apparatus, since doing so would allow precise movements to create objects where tight volumetric tolerances are needed.

Response to Arguments

45. Applicant's arguments filed 8/5/2009 have been fully considered but they are not persuasive.

46. Applicant has presented two arguments. The first argument involves the teachings of Exner in the rejection under 35 USC 102b, and the second argument involves the use of the Masters reference in the rejection under 35 USC 103a.

47. In response to arguments against the Exner reference:

48. The Applicant's argue that Exner does not teach the following from claim 30:

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49. “the support and the material application device are moveable with respect to each other in such a way, that during the interconnection of the applied layer to a layer, which was applied before, the layer, which was applied before, and the material application device are moved with respect to each other and the support can be moved relative to the material application device in a rotational movement with feed in direction of the axis of rotation.”

50. The Examiner disagrees. Separately in both the first and third embodiments of Exner's disclosure Exner teaches the following:

51. a) The material application device is moved

52. b) The powder supply bed is lifter up

53. c) The powder is moved from the supply bed to the building bed (with the support) by the movement of the material application device

54. d) The newly deposited powder layer is processed on top of a previously deposited layer

55. e) The building bed (with the support) is lowered

56. Therefore during interconnection of the newly and previously deposited layers the material application device is moving relative to both the previously deposited layer and the support due to the actions in step c). Since the material application device is rotating, while applying a new layer to the previous layer (i.e. interconnection), and thus the material application device is also moving relative to the support during this time.

57. Also, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

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(i.e., solidification) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

58. In response to arguments against the Exner reference:

59. Applicant argue that Masters does provide motivation for:

60. Wherein the supports make a rotational movement on a non-circular path, preferably a polygon with n corners, for the case n supports are provided.

61. The Examiner disagrees.

62. Masters teaches an apparatus for the computer control of a stage for the layer by layer building of three dimensional objects. The computer controllable x and y stages of Masters would provide the exact same function as claimed in claim 61, and when combined with the Exner apparatus it would provide the supports of Exner precise movement along two axes, as is claimed in claim 61.

63. Also, in response to applicant's argument against the Masters reference, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Conclusion

64. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY KENNEDY whose telephone number is (571) 270-7068. The examiner can normally be reached on Monday to Friday 9:00am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571) 272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tjk

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791